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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/723,859

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EXAMINER

MEHTA, PARIKHA SOLANKI

ART UNIT

PAPER NUMBER

3737

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/723,859	Applicant(s) AVINASH ET AL.	
	Examiner PARIKHA S. MEHTA	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/8/10</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 13 Aug 2010 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-8, 10-20 and 22-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Riederer et al (US Patent No. 5,363,844), hereinafter referred to as Riederer ('844).

Regarding claims 1-4 and 13-16, Riederer ('844) discloses a method and program including the steps of acquiring a set of motion data during a breath hold, deriving an attribute of motion from the set of motion data, deriving an initiation threshold and termination threshold from the attribute, and generating a set of gated image data using gating intervals derived from the thresholds (col. 5 lines 31-53, col. 6 line 29-36). Riederer ('844) discloses that the set of motion data is acquired from a navigator pulse sequence, which is the same as acquiring a set of pre-acquisition image data as claimed in the instant application (col. 5 lines 5-58). Riederer ('844) discloses that the displacement of the diaphragm may be detected via the NMR system, which constitutes an electrical sensor, and respiratory bellows, which constitute non-electrical sensors (col. 2 lines 14-15, col. 5 lines 34-37, col. 7 lines 2-6).

Regarding claims 5-8 and 17-20, Riederer ('844) shows that the image data is acquired when a first measurement of motion decreases below an initiation threshold, and acquisition ceases when motion increases above a termination threshold, wherein the beginning and end of the breath hold disclosed by

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Riederer ('844) constitute the initiation and termination thresholds, respectively, as claimed in the instant application (Fig. 3). Furthermore, the duration of the breath hold disclosed by Riederer ('844) constitutes a quiet period as claimed in the instant application. Riederer ('844) also discloses that the motion measurements are acquired concurrently with the image data (col. 5 lines 37-36).

Regarding claims 10-11 and 22-23, Riederer ('844) states that a respiration monitor is used to detect an acceptable breath-hold, and to generate the respiratory trigger pulse, which is the same as determining if a scan parameter is satisfied and acquiring image data based on the scan parameter as claimed in the instant application (col. 5 lines 48-54). In the method of Riederer ('844), the absence of the respiratory trigger pulse when the breath-hold is not acceptable is the same as a notification as claimed in the instant application.

Regarding claims 12 and 24, Riederer ('844) discloses a step and routine for providing a visual notification to the patient indicating breath hold status (col. 6 lines 54-66).

Regarding claims 25-29, Riederer ('844) discloses an imaging system and computer programs for performing the method of claims 1-12 of the instant application, wherein the system comprising an imager configured to generate a plurality of signals representative of the diaphragm and heart, data acquisition circuitry, data processing circuitry, system control circuitry for generating a set of gated image data, an operator workstation, a sensor-based motion determination system to measure electrical and non-electrical attributes of one or more organs, wherein the sensor-based motion determination system employs respiratory bellows, which constitute pressure sensors (Fig. 1, col. 7 lines 2-6, col. 3 line 4 – col. 5 line 30).

Regarding claim 30, Riederer ('844) provides means for generating gated image data by activating the imager based upon a gating interval (col. 2 lines 11-13).

Regarding claim 31, Riederer ('844) discloses means for generating gated image data by registration, which constitutes selectively processing a plurality of signals based upon gating intervals (col. 2 lines 38-41).

Regarding claim 32, the system of Riederer ('844) includes a color-coded visual feedback device configured to notify the patient of a breath hold status based upon data from a sensor-based motion determination system (col. 6 lines 54-66).

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riederer (US Patent No. 5,363,844). Riederer ('844) teaches all features of the present invention as previously described in this Office Action. While Riederer ('844) teaches displaying the motion data and determining if the gating intervals are acceptable, Riederer ('844) does not explicitly teach the step of replacing the thresholds or gating intervals if they are determined to be unacceptable (col. 5 lines 48-50). However, it would have been obvious to one of ordinary skill in the art at the time of invention to add this step to the method of Riederer ('844), as it is well known in the art that image data acquired during an unacceptable gating interval is not accurate or useful.

Response to Arguments

6. Applicant's amendments of 13 Aug 2010 are sufficient to overcome the previous rejection of claims 1-12 under 35 U.S.C. 101 for failing to transform underlying subject matter or be tied to another statutory class.

7. Applicant's amendments of 13 Aug 2010 are sufficient to overcome the previous rejection of claims 13-24 under 35 U.S.C. 101 for including within their scope transitory signals.

8. Applicant's amendment to claim 13 is sufficient to overcome the previous rejection of claims 13-24 under 35 U.S.C. 112, second paragraph, for reciting improperly defined means plus function language.

9. Applicant's cancellation of claim 35 as of 13 Aug 2010 renders the previous rejection of such claim under 35 U.S.C. 112, 2nd paragraph moot.

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10. Applicant's arguments filed 13 Aug 2010 regarding the prior art rejections have been fully considered but they are not persuasive. All points raised by Applicant were sufficiently addressed in the Examiner's Answer of 16 June 2010, and, for brevity, will not be repeated here.

Conclusion

11. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parikha S. Mehta whose telephone number is (571)272-3248. The examiner can normally be reached on M-F, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571.272.4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN CASLER/
Supervisory Patent Examiner, Art Unit
3737

Parikha S. Mehta

Examiner – Art Unit 3737